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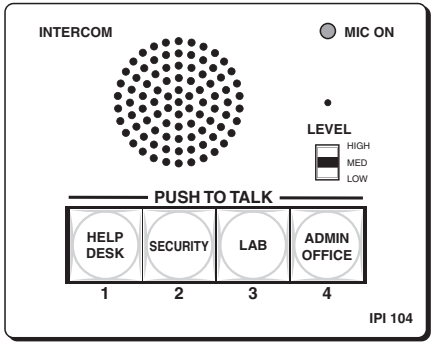
INTERFACING, SWITCHING AND DISTRIBUTION

User's Manual

PRELIMINARY



IPI 101, IPI 104

MediaLink™ IP Intercom™ Interfaces

68-1170-01 **Rev. A**
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Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Öbjekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1001 East Ball Road
Anaheim, CA 92805, USA

Europe, Africa, and the Middle East:
Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Asia:
Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Japan:
Extron Electronics, Japan
Kyodo Building
16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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安全须知 • 中文

这个符号提示用户该设备用户手册中有重要的操作和维护说明。

这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必须使用有地线的供电系统供电。 第三条线（地线）是安全设施，不能不用或跳过。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线， 避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。 不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。 必须使用与厂家推荐的相同或相近型号的电池。 按照生产厂的建议处理废弃电池。

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Quick Start Guide — IPI 101, IPI 104

WARNING *Installation and service must be performed by authorized personnel only. These products must be used with UL approved, grounded electrical boxes.*

To install and set up an Extron IP Intercom System, follow these steps and see the appropriate section of this manual for details:

Step 1

Turn all of the equipment off and **disconnect the power cords**. Make sure that the MLC 226 IP, and the IPI 101 AAP or IPI 104 AAP are all turned off and disconnected from the power source.

Step 2

Select the installation location and install an electrical wall box for each IPI unit and MLC 226 IP in the system. Read "Sample Applications" near the end of chapter 2 for ideas on various ways to design an intercom system.

Step 3

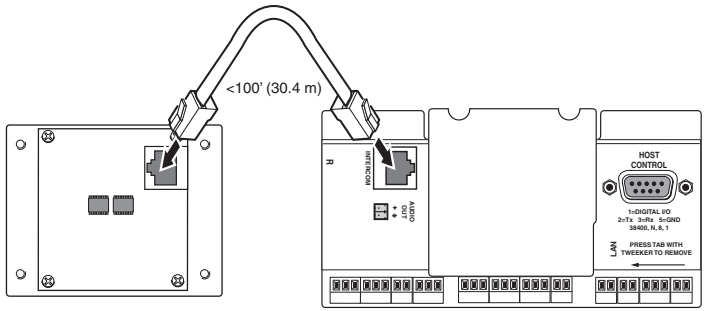
Install button labels in each IPI's buttons. See page 2-2 for instructions.

Step 4

Mount each IPI into an AAP wallplate or device faceplate, as described on page 2-4.

Step 5

Connect each IPI to an MLC 226 IP via the RJ-45 intercom ports on using a standard CAT 5, CAT 5e, or CAT 6 straight through network cable. See "Rear Panel Features and Cabling" in chapter 2.



IPI 104 AAP or IPI 101 AAP Rear Panel

MLC 226 IP Rear Panel

Step 6

Cable each MLC 226 IP to other devices: connect the MLC's LAN port to the local network via a standard network cable with RJ-45 connector, and, if desired, cable the rear panel Audio connector (see

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Quick Start Guide — IPI 101, IPI 104, cont'd

page 2-6) to speakers for local audio output. Cable other devices (control modules, SCP, IR Emitters) to the MLC as needed.

Step 7

Install each MLC 226 IP and IPI into the wallboxes you installed in step 2 above.

Step 8

Connect the console PC(s) to the network.

Step 9

Connect the PC(s) and MLCs to power sources and turn on the PC(s).

Step 10

Configure the MLC 226 IP. Refer to the *MLC 226 IP User's Manual* and the Global Configurator help file for instructions.

Step 11

Install the Extron IP Intercom HelpDesk™ software on a PC. See page 4-2 for software installation instructions.

Step 12

Use the IP Intercom HelpDesk™ software and Configuration Utility to configure any and all IPI units that are part of the system. See "Setup procedure" in chapter 4 of this manual for instructions on how to configure the IPIs.

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Chapter One

Introduction

About this Manual

About the MediaLink™ IP Intercom Modules

Features

System Requirements

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PRELIMINARY

About this Manual

This manual contains information about the Extron MediaLink™ IP Intercom™ modules (IPI 101 AAP and IPI 104 AAP) and on how to operate and configure them.

Terms used in this manual

- The terms "IPI" and "intercom" are used interchangeably in this manual to refer to both models.
- The term "console" refers to a PC that is running the IP Intercom HelpDesk™ software and is connected to one or more IPI Intercom Systems (MLC 226 IP + IPI 104/101 AAP) via a local area network.
- "MLC" refers to an MLC 226 IP MediaLink Controller.
- "WAV" refers to a Waveform audio format file, which has a filename extension of ".wav".

Additional reference material

The following documents may be helpful to you during installation and they are referred to in this manual. They are available at www.extron.com.

- *MLC 226 IP User's Manual*
- IP Intercom brochure
- *Extron MediaLink Network Impact Statement*
- *Extron MediaLink Best Implementation Practices*
- *Global Configurator Help File* (automatically downloaded and installed along with the Global Configurator software)

About the MediaLink IP Intercom Modules

The Extron MediaLink IPI 104 AAP is a four-button IP intercom module and the IPI 101 AAP is a one-button IP intercom module for use with Extron's two-way IP Intercom System. The IP Intercom System facilitates room-to-help desk or room-to-room communications within a building, a group of buildings, or even greater distances as long as the intercoms are part of the same network. It provides enhanced support using a standard local area or wide area IP network. For an IP Intercom System, each room requires an MLC 226 IP MediaLink Controller connected to an IPI 104 AAP or IPI 101 AAP. MediaLink IP Intercom HelpDesk™ software is installed on a central office or help desk PC to configure and manage IP Intercom System operations.

Connections between the IPIs with MLC 226 IP and the network are via existing network drops using standard CAT 5, CAT 5e, or CAT 6 cables.

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The Windows©-based MediaLink IP Intercom HelpDesk software makes it easy to set up, manage, and monitor the IP Intercom System. The software also provides the ability to:

- Transmit and receive calls or pages
- Forward prerecorded voice announcements or chimes to a group of individual rooms
- Run on up to four Windows-based PCs
- Hyperlink to GlobalViewer™
- Support hands-free operation

With the paging feature, the help desk operator can page a single room or group of rooms simultaneously. A line level output is available on the back on each MediaLink controller to mix into a local sound system in each room.

The IP Intercom enables real-time audio monitoring by the help desk for any room where an IPI is installed. Using the IP Intercom HelpDesk software, intercom calls and pages can be logged and date- and time-stamped on the help desk computer. Event logs can be accessed and archived for record keeping and tracking purposes.

In addition to the status monitoring capabilities built in the MLC 226 IP, the IP Intercom makes it possible to monitor audio for each room. For example, if a projector is disconnected from the MLC 226 IP serial port, the GlobalViewer software can be configured to automatically notify a help desk operator or security personnel via e-mail. For immediate notification, e-mails can be sent to multiple addresses including cell phones and wireless PDAs. Help desk operators or other authorized personnel can then use the IP Intercom's audio monitoring capability to listen to the activity in this room, helping them determine if security personnel should be dispatched to investigate.

Features

- Two-way, half-duplex voice communications over an IP network
- Compatibility with IP Intercom-enabled MLC 226 IP MediaLink Controllers
- Backlit, configurable Push To Talk buttons
- Integrated speaker and microphone
- Three-position switch to adjust speaker volume levels
- LED indicator to show when the room is being monitored
- Four space Architectural Adapter Plate (AAP) opening mounting
- Connection via existing network cable drops (one drop per MLC-IPI pair)

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System Requirements

The IP Intercom HelpDesk software is available at no charge via the Extron Web site (http://www.extron.com) or the CD that comes with your IPI. To install and run IP HelpDesk, you need a PC with the following things installed:

- Microsoft Windows 2000 or Windows XP installed (Do not run this software on a PC that uses an earlier version of Windows.)
- Pentium III, 750 MHz or faster microprocessor
- 128 MB RAM available memory (256 MB is recommended)
- 50 MB or more available hard disk space
- Windows-supported sound card, microphone, and speakers
- Microsoft Direct X version 9.0c or higher
- .NET framework, version 2.0 or higher
- network card and a network connection

Chapter Two

Installation

UL Requirements

Installing or Replacing Button Labels

Mounting the IPI Into an AAP Wall Plate or Device Faceplate

IPI Rear Panel Features and Cabling

MLC Audio Connection

Sample Applications

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PRELIMINARY

WARNING *Installation and service must be performed by authorized personnel only. This product should be used with a UL approved electrical box. See "UL Requirements", below.*

NOTE *The MLC 226 IP to which the IPI intercom is connected must have been shipped after November 16, 2005 and also have firmware version 1.05 or higher in order to support the IPI. To set up the IPI you must use the IPI Intercom HelpDesk™ software.*

UL Requirements

1. This unit is not to be connected to a centralized DC power source or used beyond its rated voltage range.
2. The IPI 104 AAP or IPI 101 AAP must be installed in a UL listed junction box.

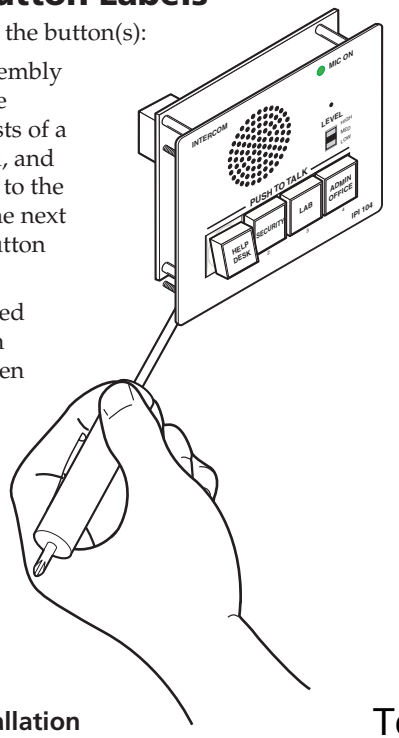
   The UL approved electrical wall box (junction box) is not included with the IPI; the installer is responsible for obtaining and installing the box.
3. The unit must be installed with accordance with the National Electrical Code and with local electrical codes.

Installing or Replacing Button Labels

Follow these steps to relabel the button(s):

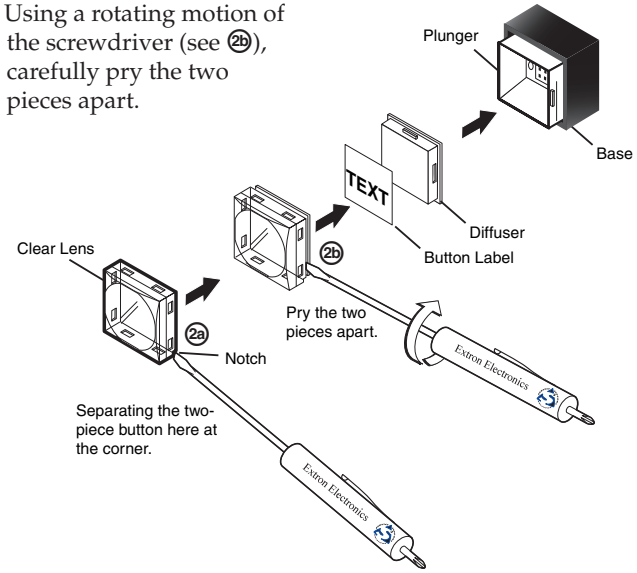
1. Remove the button assembly from the intercom. The button assembly consists of a clear lens cap, the label, and a white diffuser. Refer to the diagram in step 2 on the next page that shows the button parts.

   Insert a small, flat-bladed screwdriver, such as an Extron Tweeker, between the button's base and the diffuser to gently pry the button assembly off from the button plunger. This step may require reaching behind the faceplate, as shown at right.



2. Locate the small corner notch on the lens cap and slide the screwdriver between the lens cap and the diffuser, as shown in 2a in the illustration below.

   Using a rotating motion of the screwdriver (see 2b), carefully pry the two pieces apart.



3. Replace the label with the new button label.
4. Press the lens cap and diffuser together and reinstall the button assembly to the product.
5. Repeat steps 1 through 4 for each button you plan to relabel.

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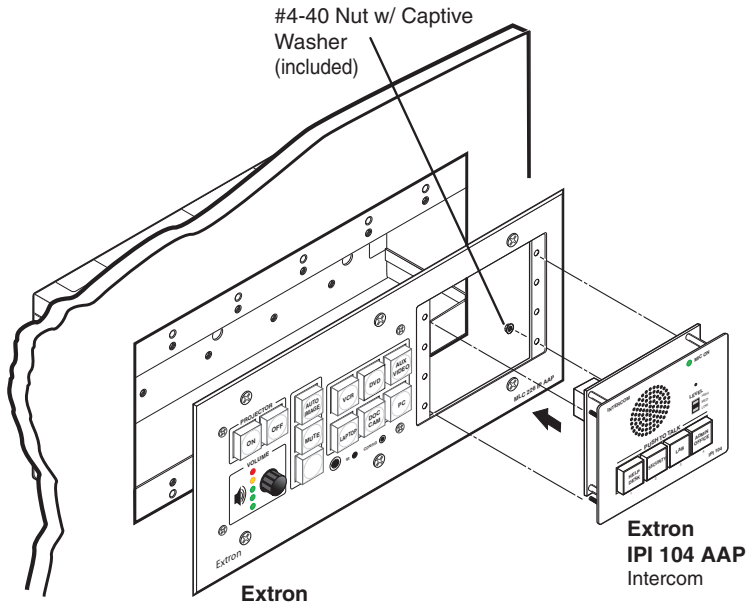
Mounting the IPI Into an AAP Wall Plate or Device Faceplate

The IPI intercom and any other adapter plates must be attached to a device faceplate or AAP wall plate and cabled before the device or wall plate is installed in a wall or furniture. The screws needed for installing the IPI are built into its front panel, so no additional screws will be needed.

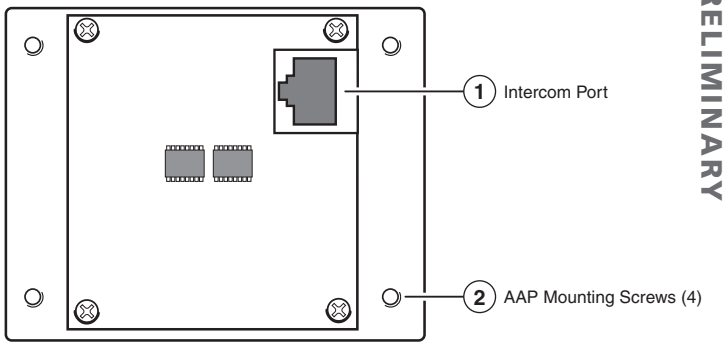
1. Before any cables are attached, insert the IPI's screws through the holes in the device's faceplate or AAP mounting frame. Secure the control module to the faceplate/wall plate with the provided captive washers and #4-40 nuts, as shown in the following figure.



2. Connect each IPI to an MLC via the RJ-45 intercom ports on both devices using a standard CAT 5, CAT 5e, or CAT 6 straight through network cable. See "Rear Panel Features and Cabling" on the next page.
3. Mount the AAP mounting frame or other device to the wall, furniture, or rack panel. Follow any special mounting instructions that came with that device.

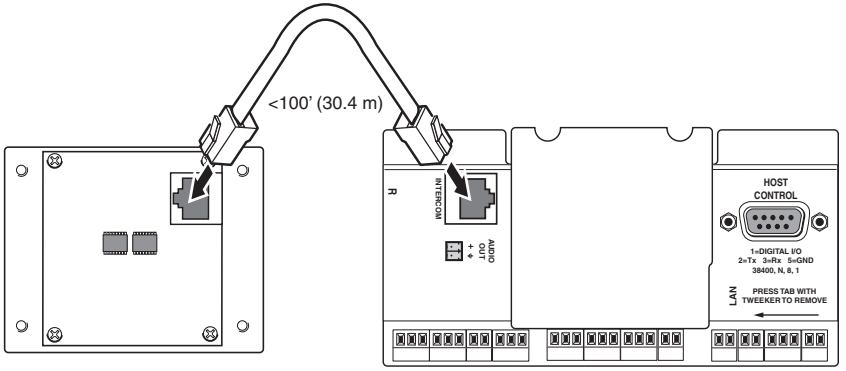
IPI Rear Panel Features and Cabling

PRELIMINARY



IPI 104 AAP, IPI 101 AAP Rear Panel

① **Intercom port** — This port is used for power, control, and voice data communication with the MLC. Plug one end of a standard, straight through, CAT 5, CAT 5e, or CAT 6 cable terminated with RJ-45 connectors into this port. Plug the other end of the cable into the Intercom connector on the MLC 226 IP's rear panel, as shown below.



IPI 104 AAP or IPI 101 AAP Rear Panel

MLC 226 IP Rear Panel

NOTE *A 12" (30.5 cm) CAT 6 cable is included with each IPI. If you choose to terminate your own cable, the cable must be no longer than 100' (30.4 m).*

② **AAP mounting screws** — These four screws are permanently attached to the IPI's faceplate. They are used for mounting the faceplate into another device (such as an MLC 226 IP AAP) or a mounting frame.

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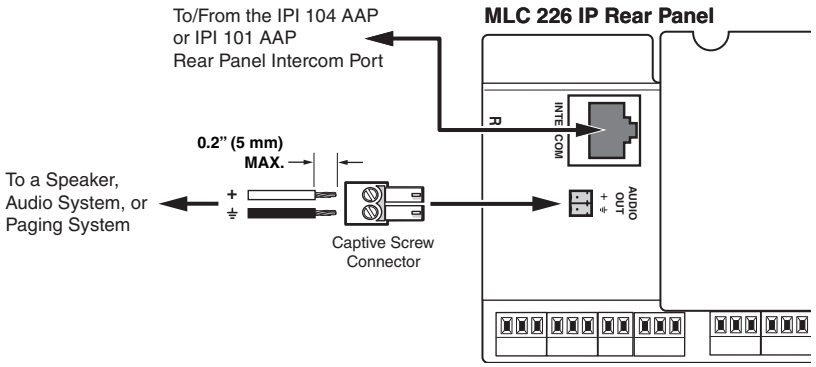
MLC Audio Connection

The MLC 226 IP Series controllers that support IPI intercom panels also have a rear panel line level audio output port that can be connected to local, powered speakers or to any audio or paging system. See the wiring guide in the illustration below.



NOTE *The volume for this audio output can be adjusted via software only.*

Sample Applications

There are several ways to make use of an IP Intercom System. To see what you can do with the IPIs, look at the sample scenarios provided in this section.

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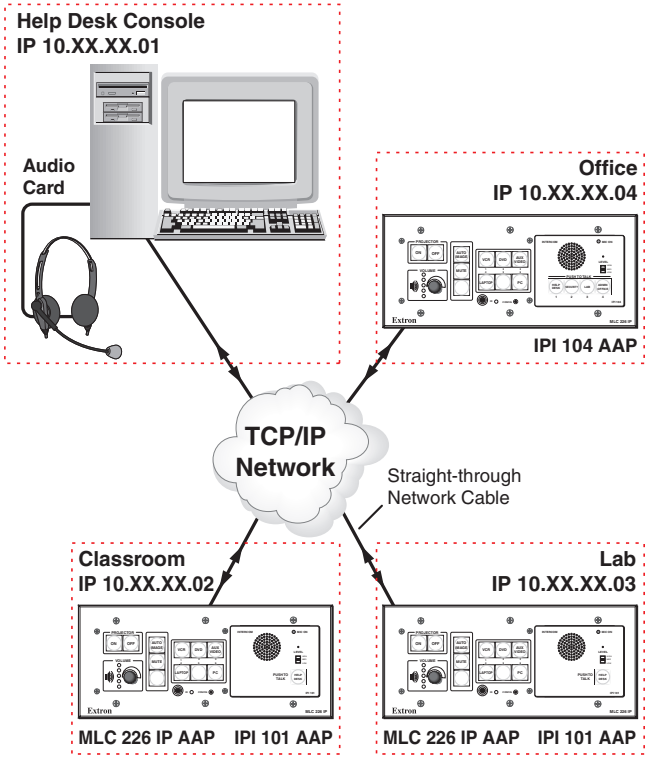
Single PC-to-panel mode

For a simple intercom system, connect one or more panels to a PC that serves as the help desk console.

1. Connect one or more IPI 101 AAPs and/or IPI 104 AAPs and an MLC 226 IP to a network using straight-through cable.



2. Using a PC in the same network, configure the IPI systems, assigning the PC's IP address to one button on each IPI. Read chapter 4 for instructions on how to use the software for configuration. The button light changes from red to low amber to indicate it is configured and connected to the PC.
3. The intercom user presses and holds the button assigned to the PC to initiate talk mode. The button glows bright amber, and the Monitor LED lights.
4. The user speaks into the intercom. Audio is output through the PC speakers at the help desk console.
5. The intercom user releases the button when done speaking.
6. The console operator clicks the Talk button (in the software) or presses the PC's space bar to respond.

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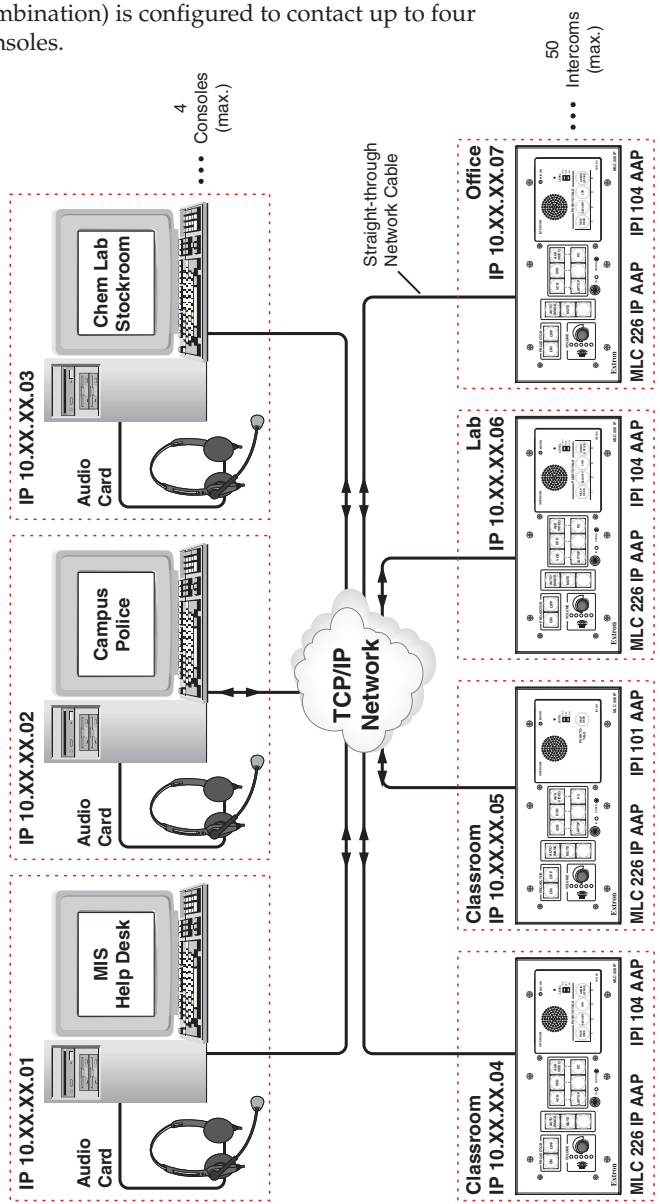
Multiple PC-to-panel mode

Some facilities may require a system with two or more console PCs. One may be staffed by a computer applications expert, another by security personnel, and a third by resource aides or lab stockroom staff. Each console is configured to connect with several intercoms, and each intercom (MLC-IPI combination) is configured to contact up to four consoles.



1. Connect up to a maximum of 125 IPI-MLC 226 IP pairs (per HelpDesk PC) to a network using straight-through cable.
2. Connect one or more PCs to the same network and install the IP Intercom HelpDesk Software on each PC. Read chapter 4 for instructions on how to install and use the software.
3. Configure the IPI-MLC 226 IP pairs and set up the intercom list for each console PC. Each console could be set up to monitor a different group of intercoms, but most likely the lists will overlap.

   In this example, in an installation in one building of a college campus, each room (classroom, lab, or office) contains an IPI 104 AAP-MLC 226 IP pair. You configure one button on each intercom to contact the computer help desk, and another button on each intercom to contact the campus security department. However, only the intercoms located in physical sciences classrooms and laboratories have a third button configured to contact the PC console in the lab stockroom. Only the intercoms installed in offices have a button configured to call the registration department's console.
4. Once the system is configured, each intercom user presses and holds a button to initiate talk mode. The button glows bright amber, and the Monitor LED lights.
5. The user speaks into the intercom. Audio plays through the speakers or headset at the console the pressed button was configured to call.
6. The intercom user releases the button when done speaking.
7. The console operator clicks the Talk button (in the software) or presses the PC's space bar to reply.

Panel-to-panel mode

You do not need to include a console PC as a permanent part of an IP Intercom System. Here is an example in which panels are configured to "talk" to each other. The software does not need to be running during intercom system operation.

1. Connect two IPI 101 AAPs and their MLC 226 IPs to a network using straight-through cable.
2. Using a PC connected to the same network (as shown in the following figure), configure the two IPI systems. Read chapter 4 for instructions on how to use the software for configuration.

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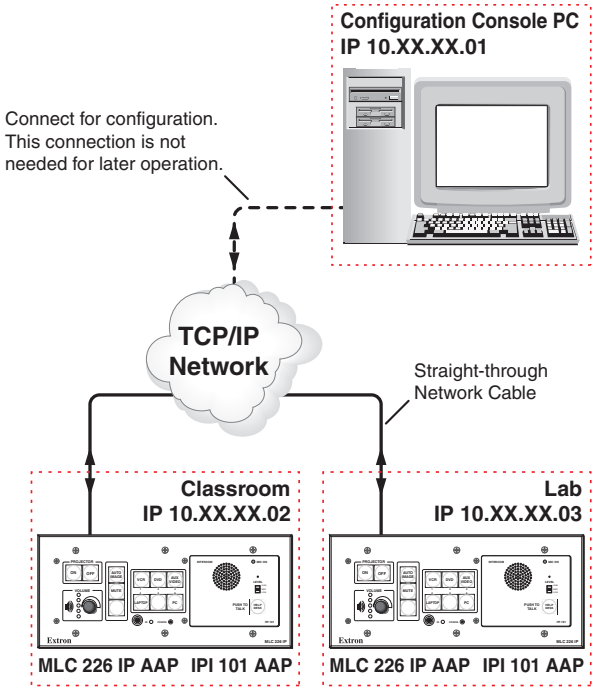
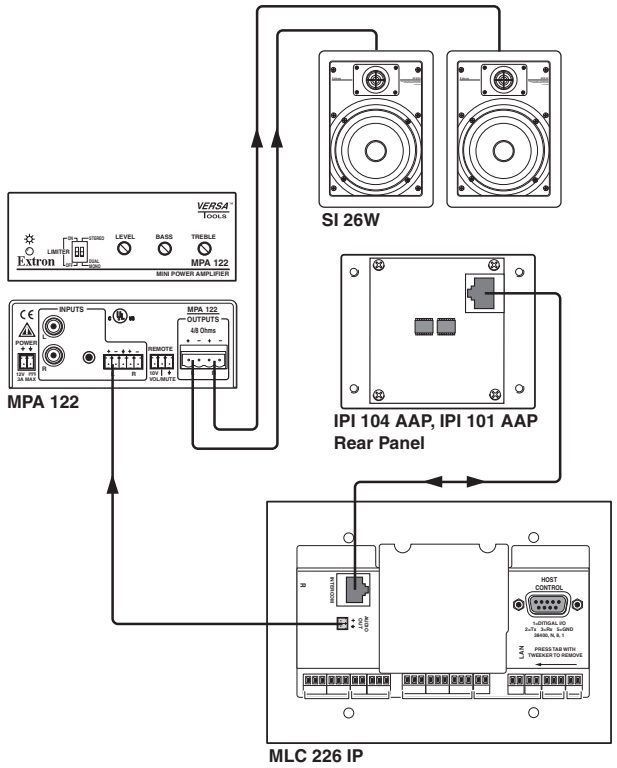


3. Close the software. The PC can be disconnected from the network or just used for other functions.
4. Push the button on one IPI to contact the other IPI. On the calling IPI, the microphone is enabled, the Mic On LED lights, and the button's light changes from low amber to bright/high amber. On the IPI being called, the button's light changes from low amber to bright/high amber.

Intercom with amplifier mode

The MLC's Audio Out 2-pole captive screw connector outputs a -10 dBV audio signal that can be routed to an MPA 122 or any external audio amplifier, then to speakers.

1. Cable the system as shown in the following diagram.



2. Power on the equipment.
3. Make fine adjustments to output level using the **Remote Line** knob in the **Advanced Audio Adjustments** part of the HelpDesk software. The external amplifier (the MPA 122 in this example) must be adjusted properly to avoid any audio signal clipping or audio distortion.
4. If desired, use the software to adjust to minimum levels the MLC's audio output, the IPI's speaker output, or both.

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3 Chapter Three

Operation

Front Panel Features and Operation

Button Operation

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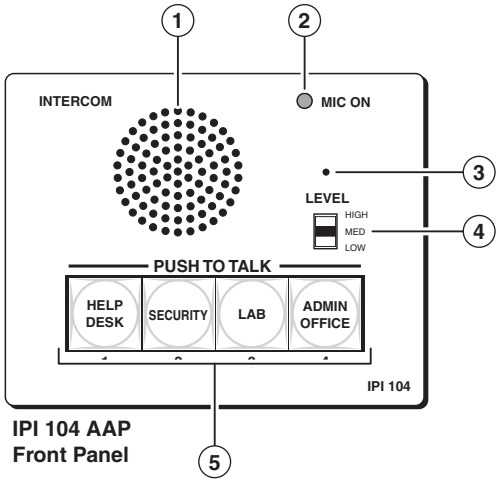
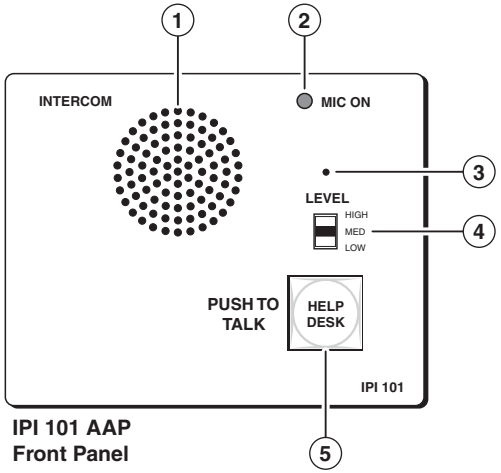
Front Panel Features and Operation



IPI 104 AAP Front Panel



IPI 101 AAP Front Panel

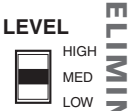
① **Speaker** — This integrated speaker provides mono output at the IPI panel. The speaker is powered by an amplifier in the MLC.

② **Mic On LED** — This LED lights under two circumstances:

- When a configured Push to Talk button is pressed.
- To indicate that someone at the help desk console is listening and that the intercom is in monitoring mode. Monitoring mode permits hands-free operation: the user does not have to press the Push to Talk button to speak into the intercom. It also lets help desk staff monitor what is happening to determine whether to send security personnel to that room.

③ **Microphone** — Speak into the microphone, which is behind this opening.

④ **Level switch** — This three-position switch lets you change the speaker's loudness level.



⑤ **Push to Talk button(s)** — The IPI 101 AAP includes one of these buttons, and the IPI 104 AAP has four.

NOTE *The MLC and IPI must be configured (via software) to associate each button with the IP address of a specific console PC or MLC/intercom pair. Once configured, the IPI 101 AAP can communicate to one location (one IP address). The IPI 104 AAP can communicate with up to four different locations.*

Button Operation

Push-to-talk operation

Press a Push to Talk button to call (contact) the help desk or to call another console. That enables the microphone, causes the Mic On LED to light, and enables communication to the location associated with that button. When pressed, the button lights bright amber.

- If the device (console PC or another IPI) being called is busy, the IPI plays a WAV (Waveform audio) file to tell the caller that the line is busy. If the pressed button is set up to call a help desk PC, a "call received" message appears at the help desk console PC to indicate that the intercom is calling.
- If the device being called is not connected to the network, the IPI plays a WAV file stored on its local MLC to notify the intercom user that the connection is not available. Also, the button lights red instead of amber.
- Once a call is successfully connected, press and hold the button when you speak, and release it to allow the other party to speak.

NOTE *You must press and hold an IPI's button to speak and to call the help desk or another intercom. When you release the button, the intercom's microphone turns off.*

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Indication (lighting)

Button Color	Indication
Amber (low)	• The button is in standby. • The device at the IP address associated with that button is turned on and is connected to the network. If that device gets disconnected or if the HelpDesk software is not running on that PC, the button lights red. Once it is reconnected, the button returns to dim amber lighting.
Amber (high)	• The IPI is communicating with the location the button is configured to call. This happens during a call, a page, or when receiving an announcement from the console PC.
Red	• The device (console) associated with the button is disconnected from the network or is turned off. • The software is not running or has been closed.

Chapter Four

Configuration and Control

Software System Requirements

Installing the Software

Using the Software: an Overview

Parts of the Main Screen

Main Screen Menus

Configuring the IPI Intercom System

Creating Audio Files Using Microsoft Sound Recorder

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The MediaLink Intercom System can be remotely set up and controlled using the IP Intercom HelpDesk™ software for Windows® and a host computer (console PC).

To function together, the PC must be network-capable with the proper protocols, and the MLC 226 IP must be set up so it can be connected to a LAN (local area network). See "Software-and Web Page-based Setup and Control" in the *MLC 226 Series User's Manual* for IP setup instructions. Once the MLC has been configured for network communication, you can install and use the intercom system software.

The included Extron IPI Intercom HelpDesk program includes a management and monitoring application (the main screen) and a configuration utility.

Software System Requirements

The IP Intercom HelpDesk software is available at no charge via the Extron Web site (http://www.extron.com). To install and run IP HelpDesk, you need a PC with the following things installed:

- Microsoft Windows 2000 or Windows XP installed (Do not run this software on a PC that uses an earlier version of Windows.)
- Pentium III, 750 MHz or faster microprocessor
- 128 MB RAM available memory (256 MB is recommended)
- 50 MB or more available hard disk space
- Windows-supported sound card, microphone, and speakers
- Microsoft Direct X version 9.0c or higher
- .NET framework, version 2.0 or higher

Installing the Software

Follow these steps to install the software on the hard drive:

1. Make sure that Microsoft DirectX and Microsoft .NET Framework are installed on your PC. Both of these components can be downloaded for free from the Microsoft Web site, and the installer program on the IPI CD installs both components if they are not already installed on the PC. DirectX supports the software's multimedia features and enables your PC to support the intercom system's audio and voice streaming. The IP Intercom HelpDesk software was developed using the .NET Framework, and it requires the Framework to run.
2. Locate and select the IPI Intercom software from the IPI CD or the Extron Web site.
3. Follow the onscreen instructions to download and install the program. By default the installation creates a directory (C:\Program Files\Extron\IPI) and installs the files there. It also adds an IPI icon to the desktop and adds program shortcuts to the Start menu in a group named "Extron Electronics". Do not change the directory or the name of the directory where these files are installed by default.

Using the Software: an Overview

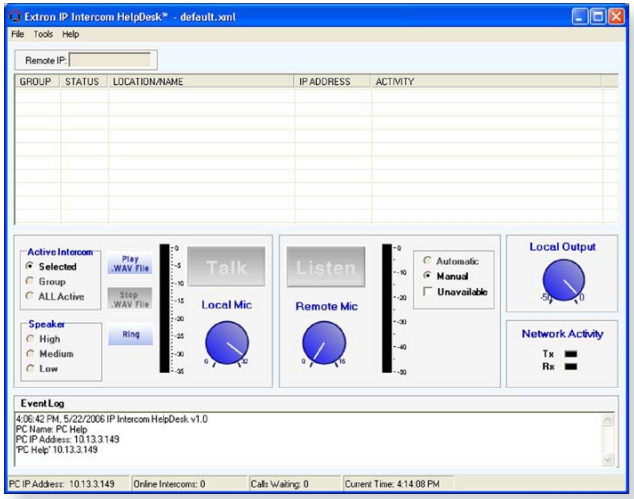
The software allows configuration access to only administrators to prevent other users from making changes to

- HelpDesk preferences
- the system configuration including the set of intercoms that a given help desk console can communicate with
- how the buttons on those intercoms are configured
- advanced audio settings for each intercom
- the **Listen** controls

If an administrator password is set for the system, non-administrator help desk operators can still use the main screen to answer and make calls, select and play WAV files, play tones, and talk to one or more intercoms. However, they are prevented from monitoring (listening to) intercoms and from making system setup changes.

NOTE *The default administrator password is "***extron***" (with all lower case letters).*

Before configuration, the basic HelpDesk screen looks much like the screen shown below. MLC/intercom IP addresses and buttons have not been configured, so MLC unit names and IP addresses are not listed in the intercom list (near the top of the screen) or in the event log area (near the bottom of the screen).



IP Intercom HelpDesk screen before configuration

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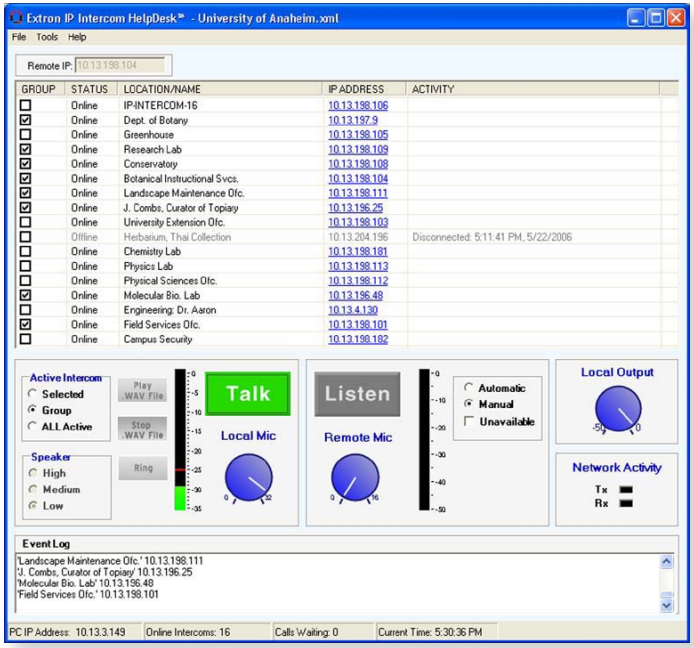
After configuration, the software screen lists the devices to be managed by the console, indicates their status (connected, disconnected, communicating), and provides several tools. Once units are configured, you can perform the following tasks:

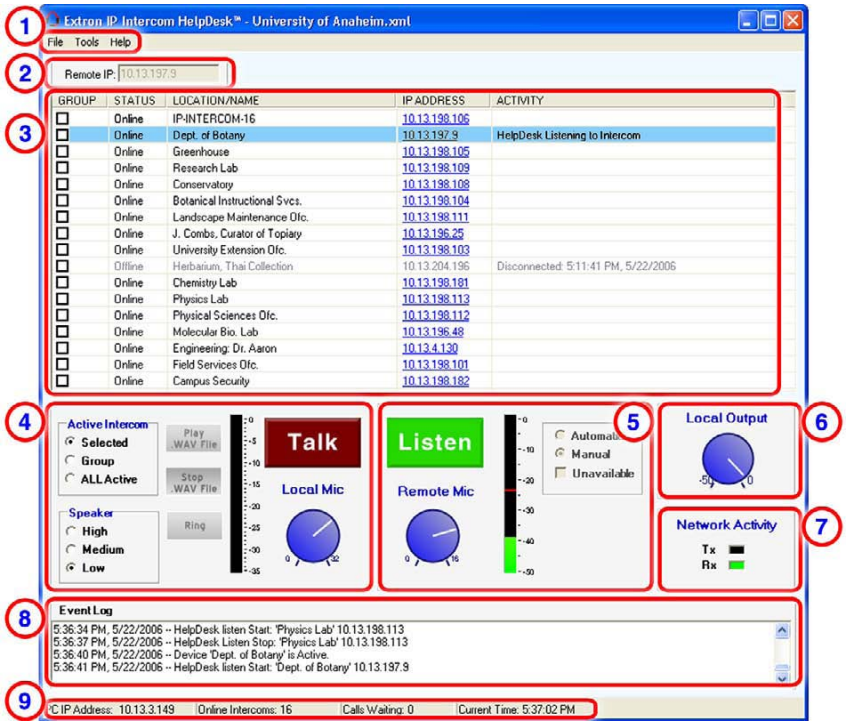
- Initiate calls from any intercom to the console (the PC running the software) or from the console to any intercom or group of intercoms.
- Use the software to view information about intercom connection and call status.
- Hear audio from a specific intercom by selecting that unit's name and clicking the **Listen** button.
- Make an announcement to several intercoms by selecting the check boxes to the left of the desired units' names/addresses, selecting **Group** from the choices in the Talk area, then clicking the **Talk** button.
- Enable the console's microphone and communicate with one or more intercoms by clicking the **Talk** button.



IP Intercom HelpDesk screen after configuration

Parts of the Main Screen

Each area of the IP Intercom HelpDesk software's main screen provides a different set of functions and/or information. Refer to the picture on the next page as a guide to this screen.



① **Menu bar** — See "Main Screen Menus" later in this chapter for details on the drop-down menus available here.

② **Remote IP area** — This box shows the selected intercom's IP address.

③ **Active intercom list** — This area shows the list of intercoms being managed by the console. Each column has a function, described below, and the row for the currently-selected MLC-IPI intercom is indicated with a light blue background.

Group — To create a group of MLC-IPI pairs to which a .wav file, ring/chime, or announcement can be sent simultaneously; click the **Group** button (see ④), then select one or more check boxes in this column. Only one group can exist at a time.

NOTE *To select a group of intercoms, you must first click the* **Group** *button, then click on the check boxes for the intercoms that will be part of the group. You cannot select a group before clicking the Group button.*

Status — View the network connection status of each MLC in this column.

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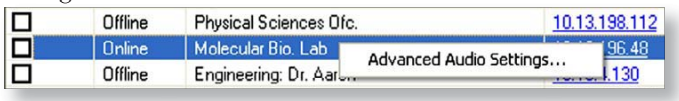
Location/Name — View the names of currently managed MLCs. If you use the **Import GC2 File** option during setup, the names come from the Global Configurator (ver. 2 or higher) GC file. However you can rename the devices as desired by using the IP Intercom Configuration Utility software. (See *Configuring the IP Intercom System* later in this chapter.)

IP Address — This column lists the MLCs' IP addresses. Each IP address is hyperlinked to that MLC's embeddded Web page or GlobalViewer Web page. Click on an IP address in this column to open that device's Web page in a browser window. The IP address is shown underlined if the intercom is online and accessible.

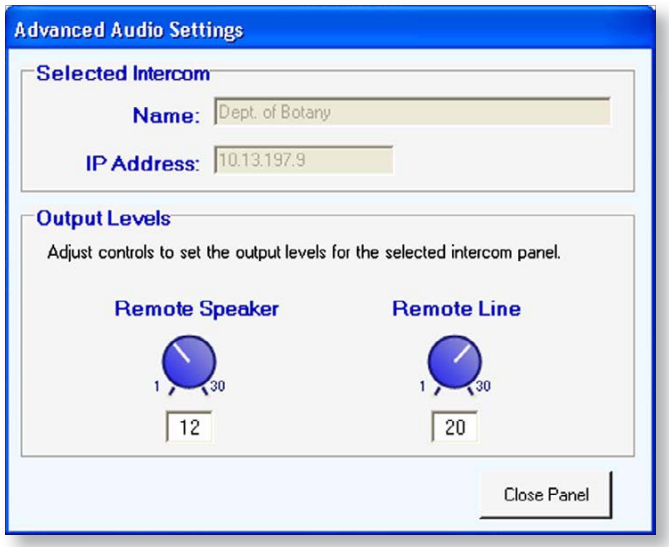
Activity — View the current activity of each MLC-IPI pair in this column, which indicates whether the intercom is actively communicating with the console, if its call is waiting to be answered, if the unit has been disconnected, or if the unit is connected but requires the operator to enter a password before communicating with it.

One more function, advanced audio settings, is available in the active intercom list area.

1. Right-click on the intercom's row.

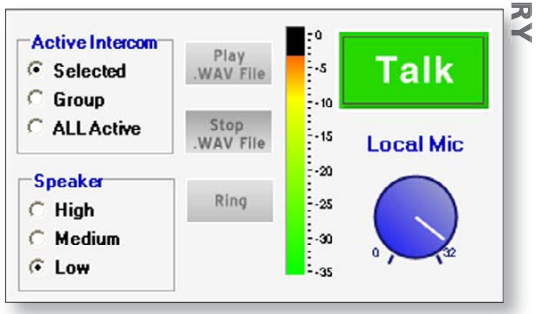


2. Select **Advanced Audio Settings**. If prompted to do so, type in an administrator password and click **OK**. A window like the one shown below appears:



3. Either click-and-drag on a knob or enter a number in the box below it. The Remote Speaker setting controls the volume of that intercom's front panel speaker. The Remote Line setting controls the volume of whatever is connected to the MLC's rear panel Audio Out port.

④ **Talk controls and indicators** — This area contains controls and adjustments the console operator uses to talk or send an audio file to one or more intercoms and to control the audio level at the intercom(s).



Active Intercom buttons — Select which intercoms to interact with by clicking one of these buttons. The console can talk or play files to the one currently selected intercom, to the intercoms in a group (those with check marks in the active intercom list's Group column (see ③), or to all intercoms in the list that are powered on and connected to the network.

NOTE *To select a group of intercoms, you must first click the* **Group** *button, then click on the check boxes for the intercoms that will be part of the group. You cannot select a group before clicking the Group button.*

Speaker level buttons — Clicking one of these buttons is just like selecting the same setting on the front panel Level switch on an IPI intercom. The intercom speaker output level you choose with these virtual buttons affects the output level of only the currently selected intercom.

NOTE *These buttons do not work when a group is selected; they affect only a single, selected intercom.*

Play, Stop, and Ring buttons (shown at right) — To play an announcement WAV file at the selected intercom(s), first load the desired file (see "File menu" in the "Menus" section of this chapter), and then click **Play WAV File**. The console operator also hears this announcement. The audio can be cancelled mid-play by clicking **Stop WAV File**.

To play a chime sound at the selected intercom(s), click **Ring**.

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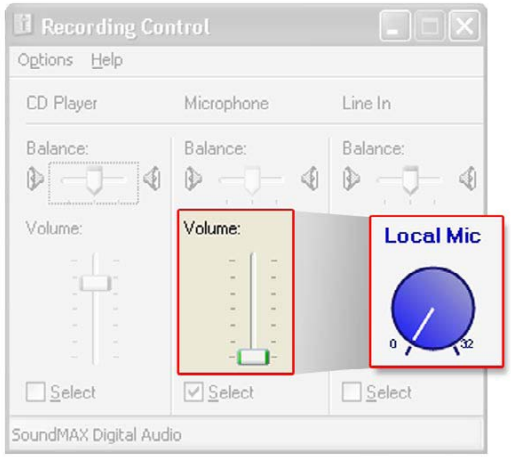
Console microphone audio level (VU) meter — The green portion of the vertical bar indicates the approximate audio attenuation level (in decibels, 0 to -35) at the microphone.

Local Mic volume control knob — This virtual knob controls the input volume of the console operator's microphone. To adjust the level, click and drag the dial as if you were rotating a knob on a product. Turning the knob clockwise increases the audio level.

This knob performs exactly the same function as the Windows control for microphone recording volume.



To use the Microsoft Recording Control, itself, click **Start** > **Control Panel** > **Sounds and Audio Devices** > Device volume **Advanced** > **Options** > **Properties** > Adjust volume for **Recording** > **OK**.
Alternatively, you can click on the volume (speaker) icon in the Windows notification area (system tray), then select **Options** > **Properties** > Adjust volume for **Recording** > **OK**.

Talk button — Click **Talk** or press the space bar on the PC's keyboard to activate or deactivate the console microphone and initiate talk with the selected intercom(s). The button turns green when talk is activated, and it returns to light gray when inactive.

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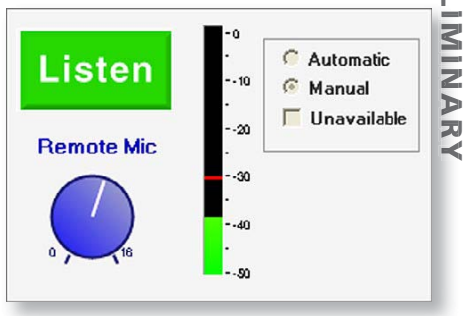
⑤ **Listen controls and indicators** — These controls determine the help desk console's listening modes and options. The console can listen to only one intercom at a time.



Listen button — This button turns green when Listen mode is activated. The button is light gray when inactive.

Listen mode turns on the selected intercom's microphone. To activate listen mode,

- The intercom user presses an intercom button that is configured to call the console.

or

- The console operator (logged in as an administrator) clicks on the desired intercom in the list, then clicks the **Listen** button on screen or presses the PC's Ctrl button.

NOTE *The console supports room monitoring (listening initiated by the console operator instead of by an intercom user) only if the administrator password was entered when the software was opened/started or when the console operator is prompted for the password. Otherwise, an intercom user must push a button on the IPI to activate the intercom's microphone, allowing the console to listen.*

Remote microphone volume control knob — The **Remote Mic** knob controls the volume of the intercom's microphone. To adjust this level, click and drag the dial as if you were rotating a knob on a product. Turning the knob clockwise increases microphone pickup volume at the intercom.

Intercom microphone input level (VU) meter — The green portion of this vertical bar indicates the approximate audio level at the selected intercom's microphone.

Help desk talk mode buttons —

- For hands-free operation for both the help desk and the intercom user, select **Automatic.** The intercom user presses the intercom's button once to activate the intercom's microphone and put the console into Listen mode. The user speaks into the intercom and does not press the button again until she/he deactivates the microphone.

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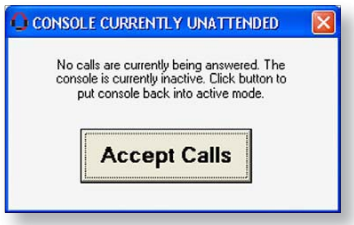
When **Automatic** is selected (the operator must be logged in as an administrator), the software's **Listen** button is automatically enabled when the **Talk** button is turned off.

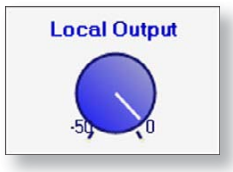
NOTE *The Automatic option is not available if you are logged in as a user instead of an administrator.*

- For press-to-talk intercom operation, select **Manual**. An intercom user must press and hold the intercom's button each time she/he wants to speak. Releasing the intercom's button deactivates the intercom's microphone. Likewise, in manual mode the console operator must click the **Talk** and **Listen** buttons to contact or listen to the intercom.
- The console operator selects **Unavailable** when she/he is about to leave the console for a break or at the end of their work shift. When this box is checked, a status box (shown below, right) appears on screen for the operator, and the users of any configured intercom that contacts the console hear an announcement stating that the console staff is busy or unavailable.


CONSOLE CURRENTLY UNATTENDED
No calls are currently being answered. The console is currently inactive. Click button to put console back into active mode.
Accept Calls

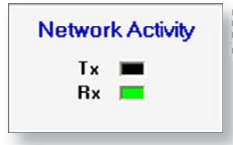
The active intercoms list shows that a call has been received (an intercom is waiting) that should be answered when the console operator returns. All calls received by the console while the operator is unavailable are labeled by day and time to allow the operator to prioritize responses when they return to the console.
Upon returning to the console, the operator clicks **Accept Calls**. The Console Currently Unattended box disappears. The help desk console now accepts calls and returns to the previously selected type of intercom operation (automatic or manual).

⑥ **Local Output level control** — To adjust the audio output volume at the console PC, click and drag this dial as if you were rotating a knob on a product. Turning the knob counterclockwise decreases (attenuates) the volume. The highest setting is 0 dB. The lowest is approximately 50 dB lower.



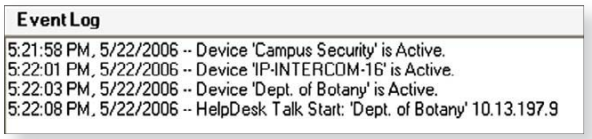
The maximum output of the PC's headset or speakers is determined by the PC's sound card and by the sound card's driver and the operating system's volume controls. This Local Output level control provides a convenient way for the console operator to lower the volume at the console without leaving the HelpDesk software.

⑦ **Network Activity** — This area includes virtual light-emitting diodes (LEDs) that light to indicate when there is communication (audio or control) between the console and one or more intercom systems. A blinking Tx LED indicates that signals are being sent by the console, a blinking Rx LED indicates that the console is receiving communications from an intercom.



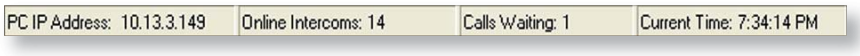
NOTE *These virtual LEDs do not reflect general network activity or non-intercom communications with MLCs or the console PC.*

⑧ **Event Log** — This section lists activities between the console and intercoms. This log is cleared and reset every time the software is restarted.


Event Log
5:21:58 PM, 5/22/2006 -- Device 'Campus Security' is Active.
5:22:01 PM, 5/22/2006 -- Device 'IP-INTERCOM-16' is Active.
5:22:03 PM, 5/22/2006 -- Device 'Dept. of Botany' is Active.
5:22:08 PM, 5/22/2006 -- HelpDesk Talk Start: 'Dept. of Botany' 10.13.197.9

To save or clear the event log, select **Event Log** from the **Tools** menu. Event logs are saved as text (*.txt) files.

⑨ **Status bar** — The status bar displays general information including the console PC's IP address, the number of active intercoms managed by that console, the number of calls waiting, and the time of day.



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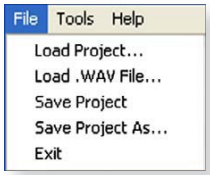
Main Screen Menus

The menus available from the menu bar at the top of the screen provide access to functions and information not found in other parts of the software.

File menu



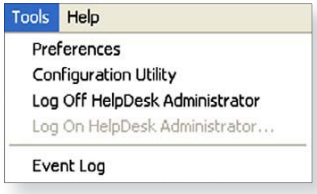
The File menu enables you to do the following things:

- Load a previously-saved list of IPI intercom systems to be managed by the help desk console (**Load Project**). These lists are saved as XML files.
- Load an audio file (**Load WAV File**) via the software to play on intercom units when the console operator clicks the **Play WAV File** button.

  Audio files that can be used for playback messages must be mono, in the .wav format, and created using 16-bit, 8 kHz sampling and the PCM format. Several files provided by Extron are placed into *C:\Program Files\Extron\IPI\wav* when the IPI Intercom HelpDesk software is installed. Examples of these files are shown in the screen image at right.

- Save the current list of IP Intercom systems (**Save Project**).
- Save the current list of IP Intercom systems (**Save Project As**) to an XML file with a filename you can find easily, back up, or copy to another PC.
- Exit the program (**Exit**).

Tools menu



The Tools menu, shown above, offers access to two important parts of this software: software preferences and the configuration utility program.

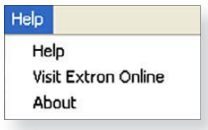
Via the tools menu you can do the following things:

- Set preferences for a variety of settings that affect both the help desk console and intercoms
- Open the configuration program so you can set up or modify an intercom system
- Log on to or off from HelpDesk administrator status
- Open the event log to view the entire session and save it to a text (*.txt) file or clear it

NOTE *The default administrator password is "***extron***" (with all lower case letters).*

Preferences are discussed in "Setting preferences" in this chapter. See "Configuring the IPI Intercom System" later in this chapter for instructions on how to configure the system after you select **Configuration Utility** from the **Tools** drop-down menu.

Help menu



- Select **Help** to open the software's help file.
- Select **Visit Extron Online** to trigger your default Web browser to display the Extron Electronics Web page.
- Select **About** to display information about the IP Intercomm HelpDesk software including the version level, a list of installed DLL files, part number, and copyright text.

Setting preferences

1. From the main HelpDesk screen, click on the **Tools** menu and select **Preferences**. A **HelpDesk Preferences** dialog box (shown on the next page) appears.

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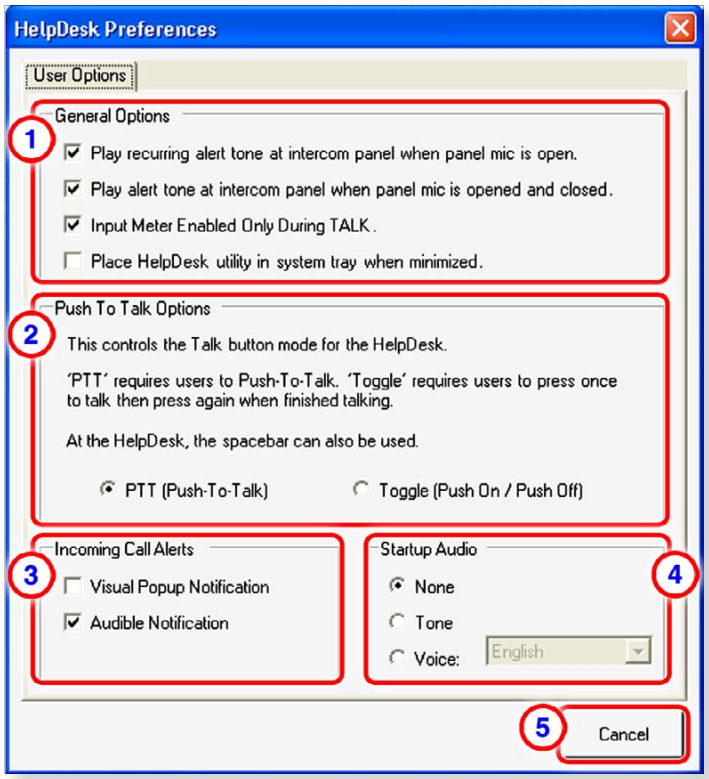
2. Select the desired settings for the system's console (PC)-intercom operations.
3. Click **OK** to accept the settings and return to the main screen.

The HelpDesk Preferences features are as follows:

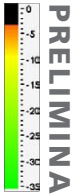

HelpDesk Preferences
User Options
General Options
Play recurring alert tone at intercom panel when panel mic is open.
Play alert tone at intercom panel when panel mic is opened and closed.
Input Meter Enabled Only During TALK.
Place HelpDesk utility in system tray when minimized.
Push To Talk Options
This controls the Talk button mode for the HelpDesk.
'PTT' requires users to Push-To-Talk. 'Toggle' requires users to press once to talk then press again when finished talking.
At the HelpDesk, the spacebar can also be used.
PTT (Push-To-Talk)
Toggle (Push On / Push Off)
Incoming Call Alerts
Visual Popup Notification
Audible Notification
Startup Audio
None
Tone
Voice:
English
Cancel
1
2
3
4
5

① **General Options**

Play recurring alert tone... — If this box is checked, the intercom plays a beep every 10 seconds while the HelpDesk's **Listen** button is active. This feature alerts the instructor/staff that help desk staff is listening in on the room.

Play alert tone at intercom panel... — If this option is selected, the intercom beeps three times quickly when the HelpDesk's **Listen** button is first activated or when the intercom user presses a Push to Talk button and connects with a help desk. The intercom plays a 2-tone beep when the **Listen** button is deactivated or the Push to Talk button is pressed and released to end a call. If this check box is cleared, the intercom does not sound to indicate an incoming call.

Input meter enabled only during TALK — When this box is checked, the PC (console) microphone audio level (VU) meter (shown at right) is disabled until the help desk operator clicks the **Talk** button and activates the microphone at the PC.



Place HelpDesk utility in system tray when minimized — If this check box is selected, when the HelpDesk software is minimized, it is put into the Windows notification area (formerly known as the system tray), in the taskbar in the lower right corner of the screen.

② **Push to Talk (PTT) Options** — These settings affect the HelpDesk Talk button, and only one of these options can be selected at a time.

PTT (Push-To-Talk) — When **PTT** is selected, the console's **Talk** button and microphone can be activated by pressing and holding the space bar or by clicking the **Talk** button and holding down the left mouse button.

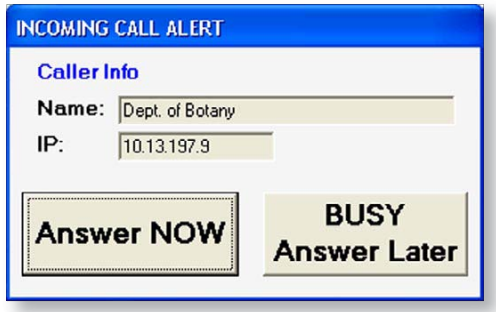
Toggle (Push On/Push Off) — When **Toggle** is selected, you activate and deactivate the **Talk** button and microphone by clicking on the **Talk** button and releasing it or by pressing and releasing the keyboard's spacebar.

③ **Incoming Call Alert** — These settings determine whether or not the help desk operator sees and/or hears an alert that an intercom is calling. Select one or both types of call anouncement.

NOTE *If more than one intercom is calling the help desk, the pop-up window for the first call is the only pop-up window displayed.*

Visual Popup Notification — If you select this option, when an intercom user presses a button, the help desk operator sees a pop-up alert like the one shown here, and the intercom user hears a "please hold" message.

If you click **BUSY Answer Later**, the intercom plays a message indicating that the support staff is busy.



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Audio Notification — If you select **Audio Notification**, when an intercom user presses a button, the help desk operator hears an alert tone.

④ **Startup Audio** — These controls affect what, if any, sound comes out of intercom speakers when the HelpDesk software is already active and an intercom is powered on *or* when the HelpDesk software starts and connects to the network.

- Select **None** to not have any audio play at the intercoms at startup. This is the default setting.
- Select **Tone** to play a beep or chime at startup.
- Select **Voice** to play a message at startup. The default voice message is "Extron IP Intercom is now activated."

⑤ **Cancel button** — To discard any changes made to HelpDesk preferences, click this **Cancel** button. To save preference changes, click the **OK** button that appears next to the **Cancel** button.

Configuring the IPI Intercom System

The Configuration Utility (also known as the configuration program) is the tool you need to set up an IP Intercom system. You must first configure the console and intercoms in order for the management software to be useful. Within this program you can assign IP addresses to specific intercom buttons and select a list of intercom systems for the help desk to monitor.

After the equipment has been cabled, installed, and powered on, follow these basic steps to set up an IP Intercom system:

1. To start the software, double-click on the IPI icon (shown at right) under the Extron group or folder.

2. Click on the **Tools** drop-down menu and select **Configuration Utility**. You need an administrator level password to access this program, so you may be prompted to enter the password. The Configuration Utility opens in a separate window.

NOTE *The default administrator password is "***extron***" (with all lower case letters).*

3. Add intercoms to the intercom list and click **Update Intercom List**.
4. Configure each intercom and click **Apply**. See the "Configuration" section in this chapter for details.
5. Exit the configuration utility. The main screen is now accessible.
6. Click on the **Tools** drop-down menu and select **Preferences**.
7. Select the desired settings for the system, then click **OK** to accept the settings and return to the main screen. See "Setting preferences" in this chapter.
8. Click on the **File** menu and select **Save Project** or **Save Project As**, then create a filename for and save the system settings.
9. Manage the intercom system using the main/management screen. See "Parts of the Main Screen" earlier in this chapter

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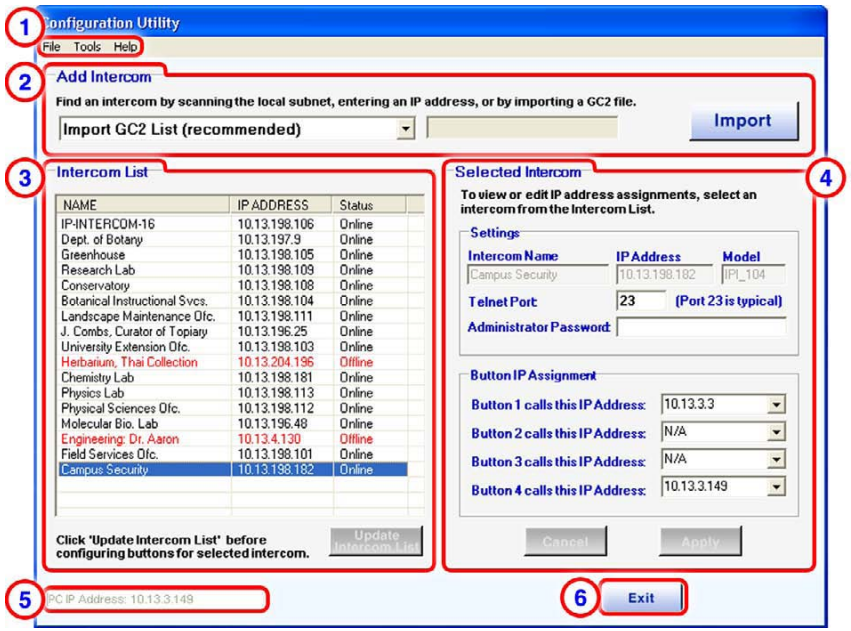
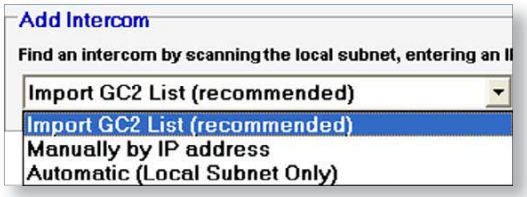
Parts of the Configuration Utility screen


1
Configuration Utility
File Tools Help
2
Add Intercom
Find an intercom by scanning the local subnet, entering an IP address, or by importing a GC2 file.
Import GC2 List (recommended)
Import
3
Intercom List
NAME IP ADDRESS Status
IP-INTERCOM-16 10.13.198.106 Online
Dept. of Botany 10.13.197.9 Online
Greenhouse 10.13.198.105 Online
Research Lab 10.13.198.109 Online
Conservatory 10.13.198.108 Online
Botanical Instructional Svcs. 10.13.198.104 Online
Landscape Maintenance Ofc. 10.13.198.111 Online
J. Combs, Curator of Topiary 10.13.196.25 Online
University Extension Ofc. 10.13.198.103 Online
Herbarium, Thai Collection 10.13.204.196 Offline
Chemistry Lab 10.13.198.181 Online
Physics Lab 10.13.198.113 Online
Physical Sciences Ofc. 10.13.198.112 Online
Molecular Bio. Lab 10.13.196.48 Online
Engineering: Dr. Aaron 10.13.4.130 Offline
Field Services Ofc. 10.13.198.101 Online
Campus Security 10.13.198.182 Online
Click 'Update Intercom List' before configuring buttons for selected intercom.
Update Intercom List
4
Selected Intercom
To view or edit IP address assignments, select an intercom from the Intercom List.
Settings
Intercom Name IP Address Model
Campus Security 10.13.198.182 IPI_104
Telnet Port 23 (Port 23 is typical)
Administrator Password:
Button IP Assignment
Button 1 calls this IP Address: 10.13.3.3
Button 2 calls this IP Address: N/A
Button 3 calls this IP Address: N/A
Button 4 calls this IP Address: 10.13.3.149
Cancel
Apply
5
PC IP Address: 10.13.3.149
6
Exit

① **Configuration Utility menu bar** — See "Configuration Utility menus" later in this chapter for details on the drop-down menus available here.

② **Add Intercom area** — This area lets you select from three ways to add intercoms to the list of intercoms the help desk console will monitor.


Add Intercom
Find an intercom by scanning the local subnet, entering an I
Import GC2 List (recommended)
Import GC2 List (recommended)
Manually by IP address
Automatic (Local Subnet Only)

See "Setup procedure" in this chapter for details.
The button on the right side of this area changes from **Import** to

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Add or **Scan** depending on the method you select for adding intercoms.

③ **Intercom List area** — The intercoms listed in this area will be served by the help desk console once you click the **Update Intercom List** button. As you add IP intercoms in the Add Intercom area, their names, IP addresses, and online/offline status appear in this area.

Click on the name of an intercom in this list to select it for setup (see ④). Right-click the unit name and choose **Rename** to rename the unit, or click and press Delete (on the keyboard) to delete it from the list.

④ **Selected Intercom area** — In this area you can configure the Telnet port number, administrator password, and the IP address assignments for each button on the intercom that is currently selected in the intercom list (③).

⑤ **PC IP Address area** — The IP address of the HelpDesk console PC appears in this area for your reference.

⑥ **Exit button** — To return to the main HelpDesk screen, click this button after you have finished creating the intercom list and setting up each intercom button.

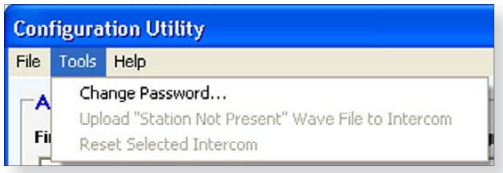
Configuration Utility menus

File menu

To exit the configuration utility and return to the main management screen (the console software), select **Exit - Return to Console.**

Select **Apply Settings** to apply the button configurations (new Telnet port number and button IP address assignments) to the MLC-IPI systems.

Tools menu



Change Password provides a dialog box you can use to change the administrator level password for the HelpDesk software. The password must be a combination of 4 to 20 alphanumeric characters.

NOTE *The default administrator password is "***extron***" (with all lower case letters).*

Upload the "Station Not Present" Wave File to Intercom lets you load the default file named *nortxeStationNotPresent.wav* to the selected MLC's memory. If the intercom user calls the help desk while the intercom button lights red (the operator is unavailable or the HelpDesk software is closed), this message is played at the intercom. You can replace the factory default recording with one of your choice, but the file you use must be named *nortxeStationNotPresent.wav*, and it must be 8 kHz, 16 bit, mono audio, in PCM format.

Reset Selected Intercom allows you to reset the currently selected MLC's intercom settings to the factory default settings. The buttons' IP address assignments will be cleared.

Help menu

Select **Configuration Utility Help** to open the configuration software's help file.

Select **Visit Extron Online** to trigger your default Web browser to open and display the Extron Electronics Web page.

Select **About** to see information about the IP Intercom HelpDesk software package, including the version levels of the main software and of the related dynamic-link library (DLL) files.

Setup procedure

Follow the steps below to set up the system.

1. To start the HelpDesk software, double-click on the IPI icon under the Extron group or folder.
2. Click on the **Tools** drop-down menu and select **Configuration Utility**. You may be prompted to enter an administrator password. The Configuration Utility opens in a separate window.
3. Create a list of intercom-enabled MLC 226 IPs. Once selected and configured, these systems will be added to the HelpDesk main window.

   A. In the Add Intercom area, select how to add IP addresses of IPI-enabled MLC units in the network:
   - automatically by importing an MLC 226 IP list of units that was created in Global Configurator 2.x or higher
   - manually by entering the IP address
   - automatically by having the software search for IPI-enabled MLCs that are connected to the network

   Import GC2 List — To use this option, click **Import**, locate and select a **.gc2* file, and click **OK**. When you use Global Configurator to set up the MLC 226 IPs that will be part of the intercom

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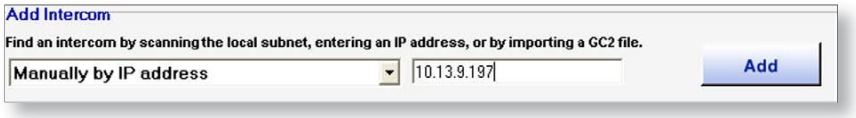
system, the software saves the configuration as a **.gc2* file. If you import that file to the IP Intercom HelpDesk software, the IP addresses, unit names, Telnet port numbers, and administrator password (if assigned) are added to the intercom list. The software filters other devices out from the configuration and imports information on MLC 226 IPs only.

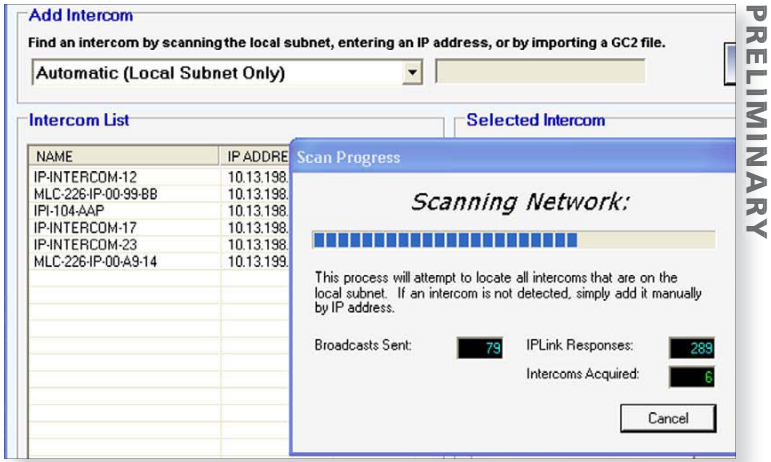
Manually by IP Address — To use this option, type the IP address of an intercom-equipped MLC 226 IP into the blank area to the right of this selection, then click the **Add** button. Repeat that process for each intercom system to add to the Intercom List.


Add Intercom
Find an intercom by scanning the local subnet, entering an IP address, or by importing a GC2 file.
Manually by IP address
10.13.9.197
Add

Automatic — To add intercom-enabled MLCs to the list automatically, select the automatic option and click the **Scan** button. The software broadcasts a message to the network and adds the responding MLCs to the Intercom List. A scanning progress window appears during the scan.

B. Add IP addresses of intercom-enabled MLCs to the list.

- For manual entry, enter an MLC's IP address in the text box, click the **Add** button. Repeat this process for each intercom to be covered by this console.
- For automatic entry, click the **Scan** button. The console checks the network for IPI-enabled MLC units that are turned on and connected to the network. As shown in the following example, it adds the name and IP address of every connected unit to the list.



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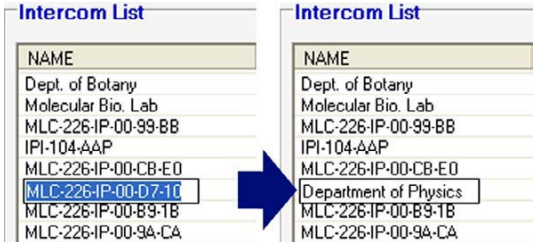
To remove specific units from the list, click on the MLC's name and press the keyboard's **Delete** key.

To change the MLC's name *as it appears in the IP Intercom Management software*, right-click on that MLC's name, select **Rename**, then type in the new name.



You must click the **Apply** button for this change to take effect in the software. This action does not affect the name stored in the MLC's flash memory.

4. Add the list of configured intercoms to the main HelpDesk page: click the **Update Intercom List** button in the Intercom List area of the configuration screen, or select **Apply Settings** from the configuration software's **File** menu.

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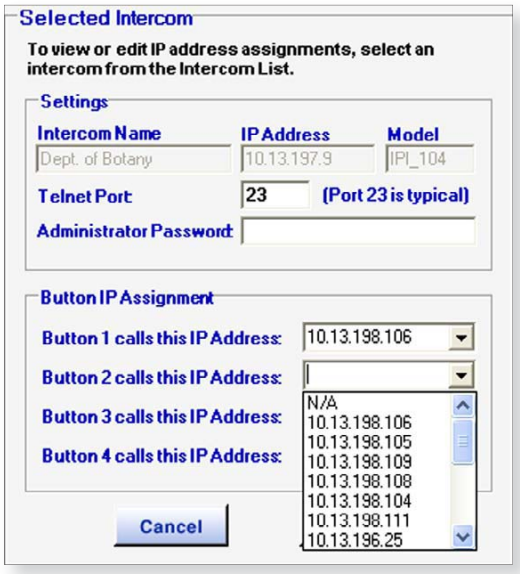
5. Assign IP addresses to the buttons of each intercom in the list.

   A. Select an MLC from the list created in step 3. That unit's name and IP address appear in the Selected Intercom area to the right of the list.

NOTE *If the selected system includes an IPI 101 AAP, only one button (the top button) is active and configurable. "N/A" appears next to three of the four buttons to indicate that that model has only one button, not four. Rows for the other buttons are also grayed out.*

   B. In the Button IP Assignment area, click on the arrow ▼ to the right of *Button 1 calls this IP Address* and select the IP address of the MLC-IPI system or the help desk you want that button to call when it is pressed. If the button will not be used, select **N/A** instead. For an example of the IP address drop-down list, see the sample screen on the next page.

   C. Repeat steps 5A and 5B for each MLC-IPI pair in the list.



6. Click the **Exit** button to return to intercom control and management.

Creating Audio Files Using Microsoft Sound Recorder

Extron provides a set of basic waveform (.wav, WAV) audio files for IP Intercom System announcements, but you can also create additional, customized sound files for each installation. There are many ways to create those files. You can use the Microsoft Sound Recorder program (included with Microsoft Windows operating system) to make your own .wav files. You need a Windows-based PC with a compatible microphone or other audio input device installed. Follow the procedure below.

Recording an original message

1. Click on the **Start** button.
2. In the **Start** menu, select **All Programs** => **Accessories** => **Entertainment** => **Sound Recorder**.

3. From the Sound Recorder's **File** menu, select **New**.
4. To begin recording, click the **Record** button and speak into the microphone.
5. To stop recording, click the **Stop** button.
6. To listen to what you just recorded, click the **Play** button.
7. To save the recorded file, click the **File** menu and select **Save As**. The Save As window appears.

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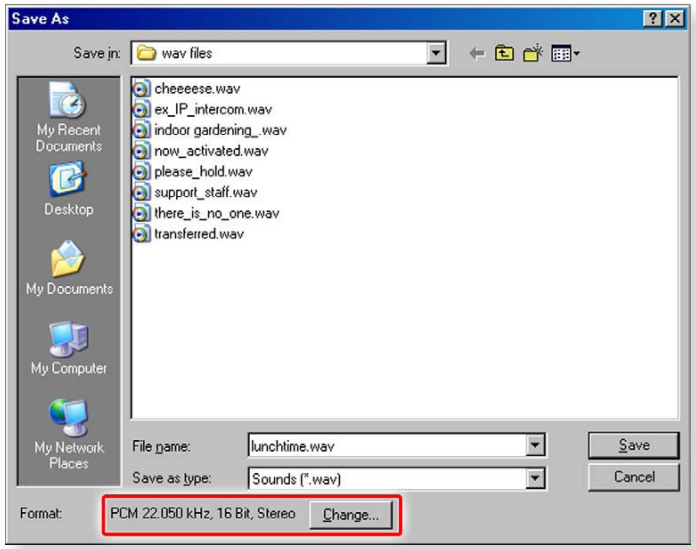
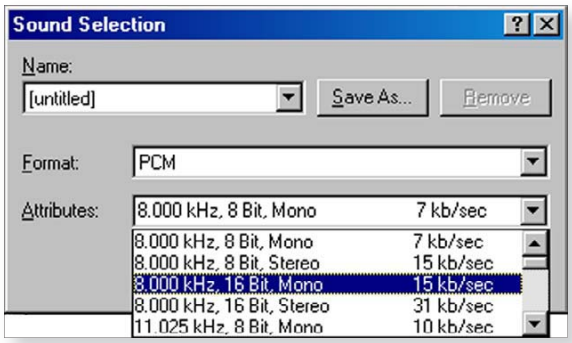


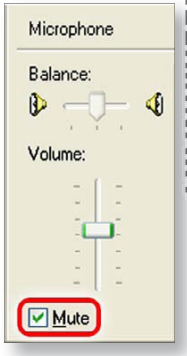
8. Type in a name for the new file, and select the .wav file type.
9. Click the **Change** button. The Sound Selection window appears. Recorded sounds are saved as waveform (.wav) files. The Windows Sound Recorder default format is PCM 22.050 kHz, 16-bit, stereo. The IPI Intercom System requires different settings.
10. In the Sound Selection dialog box, click on **Attributes** and select the audio format of **PCM**, **8.0 kHz, 16 bit, mono**, as shown below.



11. Click the **OK** button to approve that audio format. The Save As window reappears.

12. Click the **Save** button to save the recorded file.

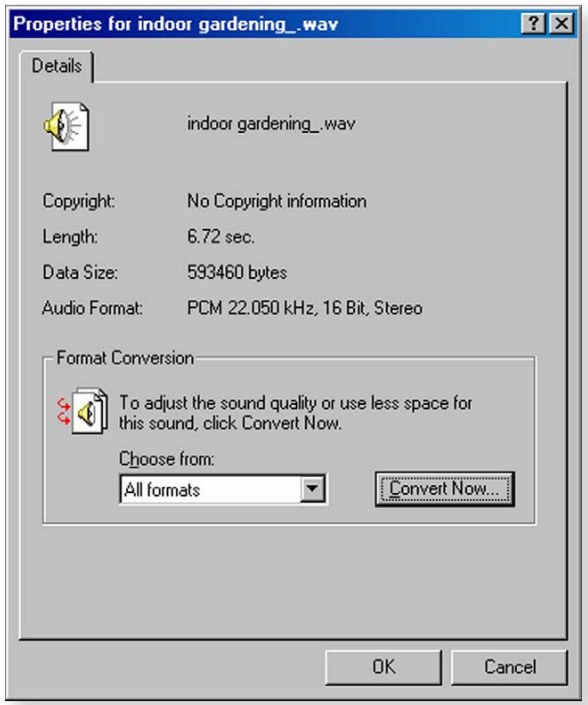
NOTE *If you use PC speakers and a microphone, you might need to use the Windows playback Volume Control to mute the microphone output so the speakers will not output audio unless the* **Talk** *button is activated.*



Changing the audio format of existing files

If the file format was set incorrectly when you created the file, or if you want to use an existing .wav file that is not formatted as an 8.0 kHz, 16 bit, mono, PCM file, follow this procedure to change the format.

1. From the Sound Recorder's **File** menu, select **Open**.
2. Locate and select the file you want to convert and click **Open**.
3. From the Sound Recorder's **File** menu, select **Properties**. The Properties dialog box appears (as shown in the following picture), displaying the duration, file size, and audio format of the selected file.



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4. Click the **Convert Now** button. The Sound Selection window appears.
5. In the Sound Selection dialog box, click on **Attributes** and select the audio format of **8.0 kHz, 16 bit, mono**, as shown in step 10 on the previous page.
6. Click the **OK** button to approve that audio format. The Save As window reappears.
7. Click the **Save** button to save the file.

Appendix A

Specifications, Part Numbers, and Accessories

Specifications

Included Parts

Accessories

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Specifications

Audio (IPI 101, IPI 104 and MLC 226 IP)

Speaker ..... 1.4" (35.6 mm), 1-way, indoor

Frequency response

- Line level output (MLC) .. 20 Hz to 3.3 kHz, ±1 dB
- Speaker output (IPI)..... 300 Hz to 3.3 kHz, -10 dB

Nominal sensitivity/IPI speaker output level
80 dB SPL, 300 mW, 3' (1 m)

Processing

- Audio format ..... PCM, µ-law companded
- Sampling rate..... 8 kHz
- Sample size..... 16 bit, µ-law companded to 8 bit
- Audio latency..... <500 ms, <150 ms is typical

Audio input (IPI)

Number/signal type ..... 1 mono, via integrated electret microphone

Gain..... 20 dB through 47 dB, adjustable

NOTE *0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu*

Audio output

Number/signal type ..... 2 mono: 1 via MLC 226 IP, 1 via IPI speaker

Line level output (MLC)..... -10 dBV (316 mVrms), unbalanced (via 3.5 mm captive screw connector, 2 pole)

Amplified output (IPI)..... 300 mW, continuous (via integrated speaker), 1% THD

Ethernet control interface via MLC 226 IP

Ethernet control/communications port
1 RJ-45 female connector

Ethernet data rate/transport bandwidth
80 kbps (0.08% of 100Base-T), half duplex

Ethernet protocol..... TCP (control), UDP (audio)

Program control (via MLC)..... Extron's control/configuration program for Windows®
Extron's Simple Instruction Set (SIS™)
Microsoft® Internet Explorer, Telnet

General

Power ..... Supplied by an MLC 226 IP

Power input requirements..... +12 VDC, <100 mA

Distance between MLC 226 IP and an IPI
50' (15.2 m), maximum

Connection type (IPI–MLC)..... RJ-45 jacks with CAT 5, CAT 5e, or CAT 6 cable

Temperature/humidity..... Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing

Rack mount..... Yes, with optional faceplate. Also furniture- and wall-mountable with optional faceplate or in an MLC 226 IP AAP faceplate.

Enclosure type ..... Metal faceplate

Enclosure dimensions

- Faceplate..... 2.8" H x 3.5" W x 0.1" D (7.1 cm H x 8.9 cm W x 0.3 cm D) (four space AAP plate)
- Board/device ..... 2.7" H x 2.6" W x 0.9" D (6.9 cm H x 6.6 cm W x 2.3 cm D) (Depth excludes buttons and switch. Allow at least 2.1" (5.3 cm) depth in the wall/furniture.)

Product weight..... 0.2 lbs (0.1 kg)

Shipping weight ..... 1 lbs (1 kg)

Vibration ..... ISTA 1A in carton (International Safe Transit Association)

Listings..... UL, CUL

Compliances..... CE, FCC Class A, VCCI, AS/NZS, ICES

MTBF..... 30,000 hours

Warranty ..... 3 years parts and labor

NOTE *All nominal levels are at ±10%.*

NOTE *Specifications are subject to change without notice.*

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Included Parts

These items are included in each order for an IPI intercom module:

Included parts	Replacement part number
IPI 104 AAP (black, white)	70-502-02, -03
IPI 101 AAP (black, white)	70-501-01, -03
RJ-45 interconnection cable (12" CAT 5e)	26-632-01
Button labels	33-1344-01
Tweeker (small screwdriver)	
User's manual	

Accessories

MediaLink Controllers, labels	Part number
MLC 226 IP (black, white, RAL9010 white, or without faceplate)	60-600-02, -03, -05, -00
MLC 226 IP AAP (black, white, RAL9010 white)	60-600-12, -13, -15
MLC 226 IP L (black, white, RAL9010 white)	60-600-32, -33, -35
Button labels (International/multilingual text)	33-956-01
Button cap and diffuser kit (set of 3 button cap assemblies)	70-352-01

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